FAST TRACK TO QPR PROCESSANALYZER

Fast Track to QPR ProcessAnalyzer

Welcome to Fast Track to QPR ProcessAnalyzer! This course will teach you the basics of being able to use QPR ProcessAnalyzer and to enjoy the benefits of process mining!

Topics covered in this course:

In the exercises of this course you will need to have credentials for QPR ProcessAnalyzer.

If you don't already have credentials, please contact your organization's process mining team. Alternatively, you can use this link to access QPR's demo and training environment and contact customercare@qpr.com to request your credentials.

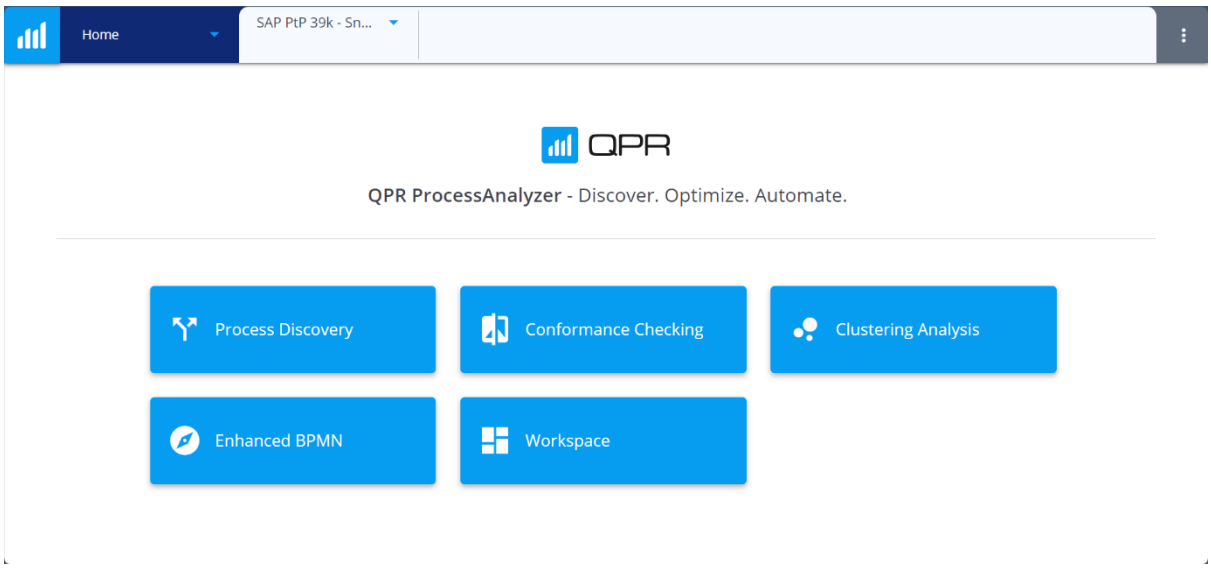
Navigating in QPR ProcessAnalyzer

We will first focus on how to navigate in QPR ProcessAnalyzer. Please log-in to QPR ProcessAnalyzer using your own credentials.

After a successful log-in, you are presented with the following options:

- Process Discovery: your standard view for ad-hoc analysis used to quickly discover the process
- Conformance Checking: standard view for quick conformance analysis to find and analyze deviations
- Clustering Analysis: out-of-the-box clustering analysis with easy cluster definition
- Enhanced BPMN: out-of-the-box view for BPMN modeling
- Workspace: Project workspace to access projects, dashboards, models, data tables, and script

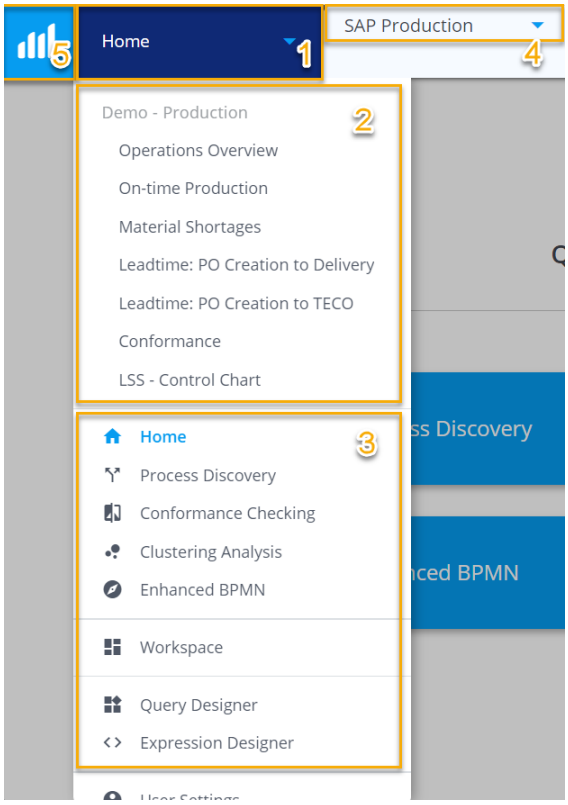
In this course, we will be using Process Discovery and Workspace.



You can navigate to different elements in QPR ProcessAnalyzer by either clicking the respective elements on the Home page or by clicking on the Navigation Menu on the top left.

After clicking on the Navigation Menu, you will see the following options:

1. Navigation Menu drop-down
2. Existing dashboards linked to the active model
3. QPR ProcessAnalyzer elements
4. Projects and Models drop-down list
5. Link to Workspace



Exercise #1: Trying out the navigation

Familiarize yourself with how to navigate in QPR ProcessAnalyzer. Do the following tasks:

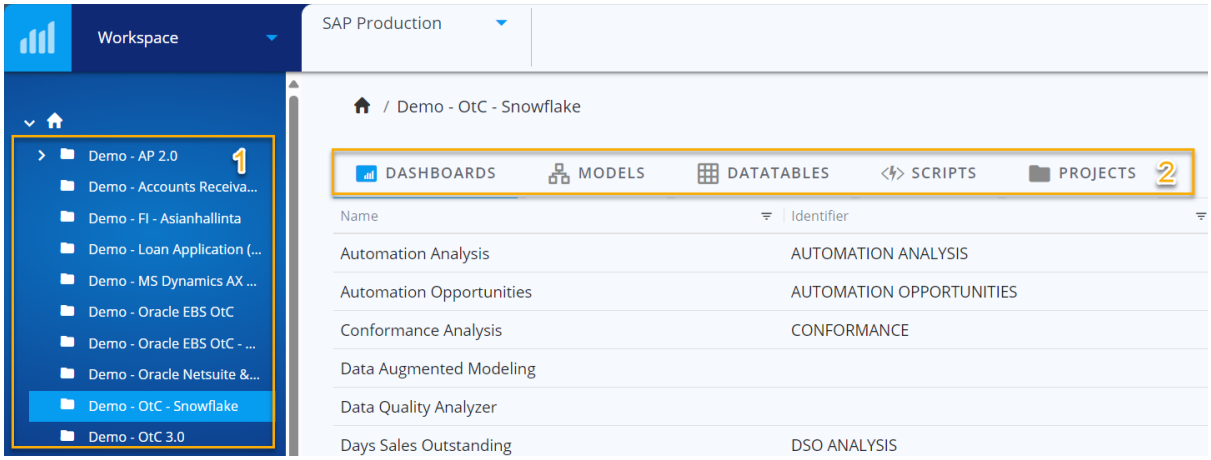
- Go to a dashboard
- Go to Process Discovery
- Change the active model
- Go to a different dashboard
- Go to Workspace

Navigation in Workspace

In addition to navigating different elements of QPR ProcessAnalyzer, it is important to learn how to find content from Workspace.

Workspace is a gallery where content in QPR ProcessAnalyzer is stored to. In Workspace, you can find all the projects you have access to. The projects can include models, dashboards, data tables, scripts, and sub-projects.

When in Workspace, select a project from the list (1.) and selection of tabs (2.) are presented to you.



Each of the tabs contain its respective content. You can open them either by double-clicking or by right-clicking and then selecting Open from the context menu. The list of visible options after right-clicking depends on your user rights.

Exercise #2: Navigating to different content in Workspace

Familiarize yourself with navigating to different content in Workspace. Try out at least the following:

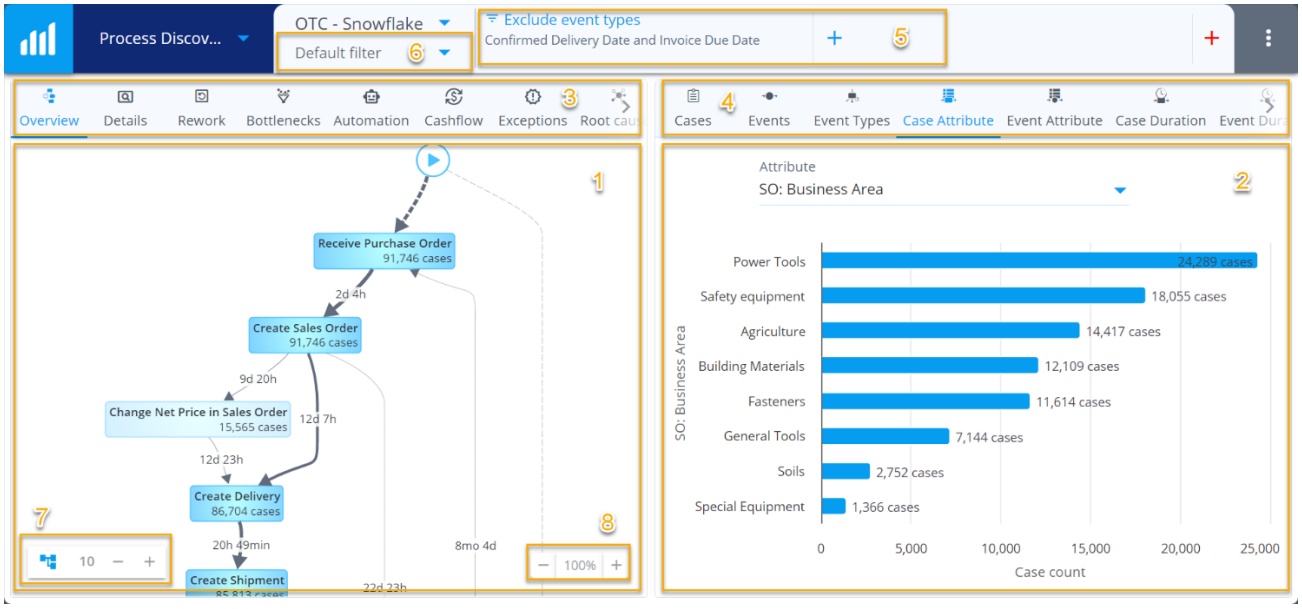
- Open a dashboard
- Change the project
- Open a model
- Open a different dashboard
- See what data tables are available
- Try to find a project with a Script
- Try to find a project with a sub-project

Introducing Process Discovery

Next, we will get familiar with Process Discovery. Process Discovery is a standard view in QPR ProcessAnalyzer which is instantly available after creating a model. Process Discovery is typically used for ad-hoc analyses as it offers many out-of-the-box analyses for general use.

When opening Process Discovery, you can see the following elements:

1. Process Flowchart
2. Chart
3. Preset tab for the Flowchart
4. Preset tab for the Chart
5. Documentation of currently applied Filters
6. Saved Filters drop-down
7. Variation stepper
8. Zoom buttons



Process Flowchart visualizes the end-to-end business processes based on the event log data. By default the 10 most common variations are visualized. If you want to see more variations, you can click + or write a number on the Variation stepper (7). You can zoom in and out by using the + and – buttons (8) or by scrolling your mouse on the flowchart.

The other main element in Process Discovery is the Chart. Chart is versatile and can be used to analyze various things such as case volumes, case distribution, lead times, variations, root causes etc. Changing to different analyses is easy thanks to *Presets*.

Presets are ready-made analyses offering users an easy way to gain insights. Some of the Presets are quickly available from the Flowchart and Chart tabs (3 & 4), while others can be accessed from Chart Settings menu.

Exercise #3: Introducing Preset Tabs

Familiarize yourself with the Presets on the tabs. Try out at least the following Presets:

Flowchart

- Details
- Rework
- Bottlenecks
- Exceptions (increase the number of visualized variations on the flowchart to 50)

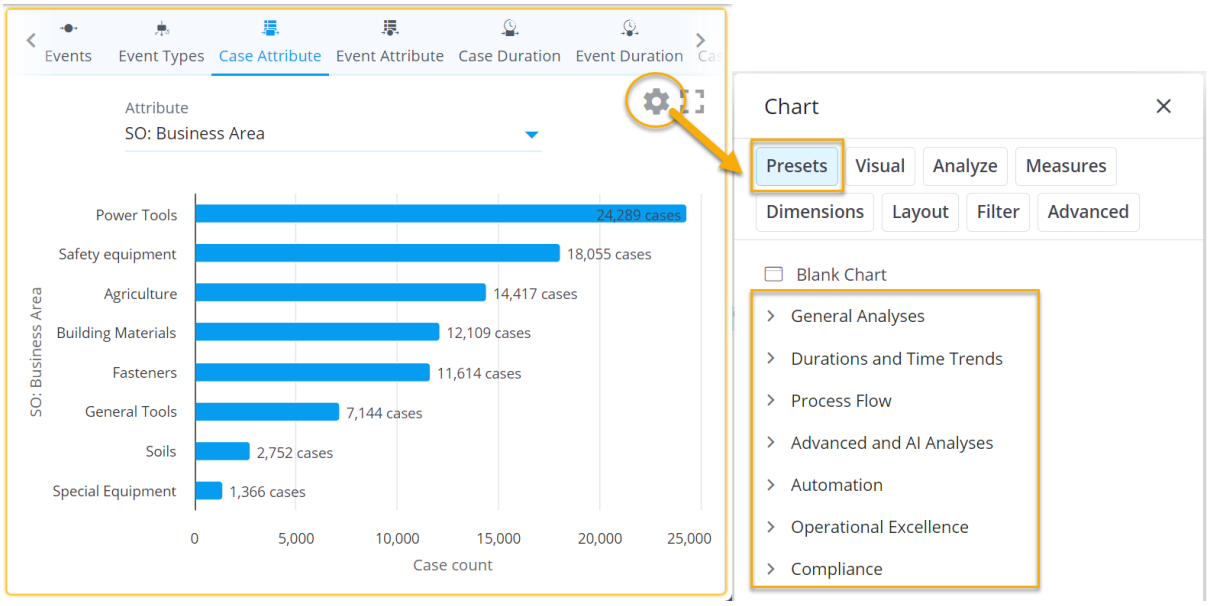
Chart

- Cases (List of cases)
- Events (List of activities)
- Case Duration (Distribution of process duration)
- Event Duration (Distribution of a specified lead time)
- Case Counts (Distribution of case count)
- Variations (List of process variations)

Finding Presets from Chart Settings

Let's go through where we can find the rest of the available Presets in QPR ProcessAnalyzer.

You can access Chart Settings by clicking on the Chart to activate it (becomes highlighted with orange) and then clicking on the cogwheel icon. You will see the "Presets" tab which lists and categorizes different Presets.



Exercise #4: Browsing Presets from Chart Settings

Browse the different categories on a high level to see what type of options are available. It's not necessary to try to understand the details of each Preset for now, just a quick look at what is available.

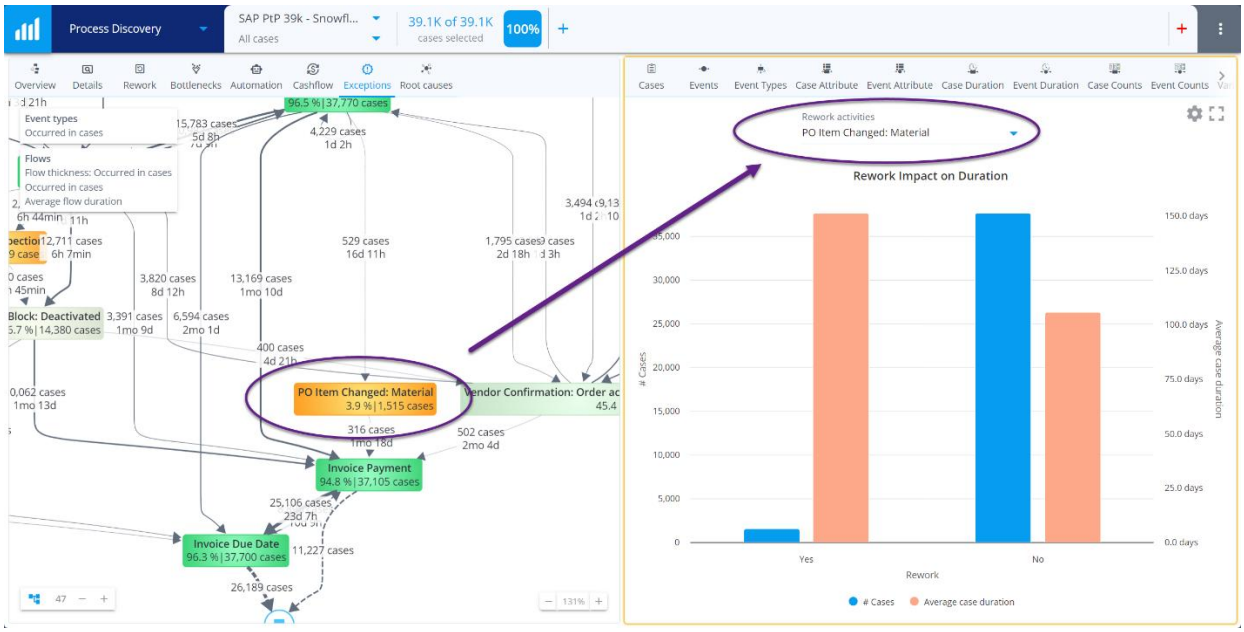
Try to find at least the following Presets:

- Event Types
- Case Count Trend
- Self-looping Events
- Path until Selected Event
- Automation per Event Types
- Automation Opportunity Scout
- Rework Impact on Duration (select an activity from the drop-down)
- Impact of Rework on SLA Success (select an activity and define the SLA on the chart)
- SLA Compliance Trend (select starting and ending activities, test out changing the target)
- On-time Event Execution Analysis (select starting and ending activities, test out changing the time limits)
- Non-compliant Order of Event Execution (test changing the activities)

Basic Analysis in Process Discovery

Conducting analysis in Process Discovery is typically the combination of using Presets, Filters, and Root Cause Analysis. As you get more advanced, you can also start to modify the Presets if the use case requires it. However, the Presets will cover most of the general use cases.

One common use case of process mining is to look for rare or exceptional activities in the process that often cause bottlenecks. To find such activities, you can simply use the "Exceptions" Preset in the Flowchart and "Rework Impact on Duration" Preset on the Chart. Select the exceptional activities in the Preset's drop-down list and you will see how they affect process lead time.

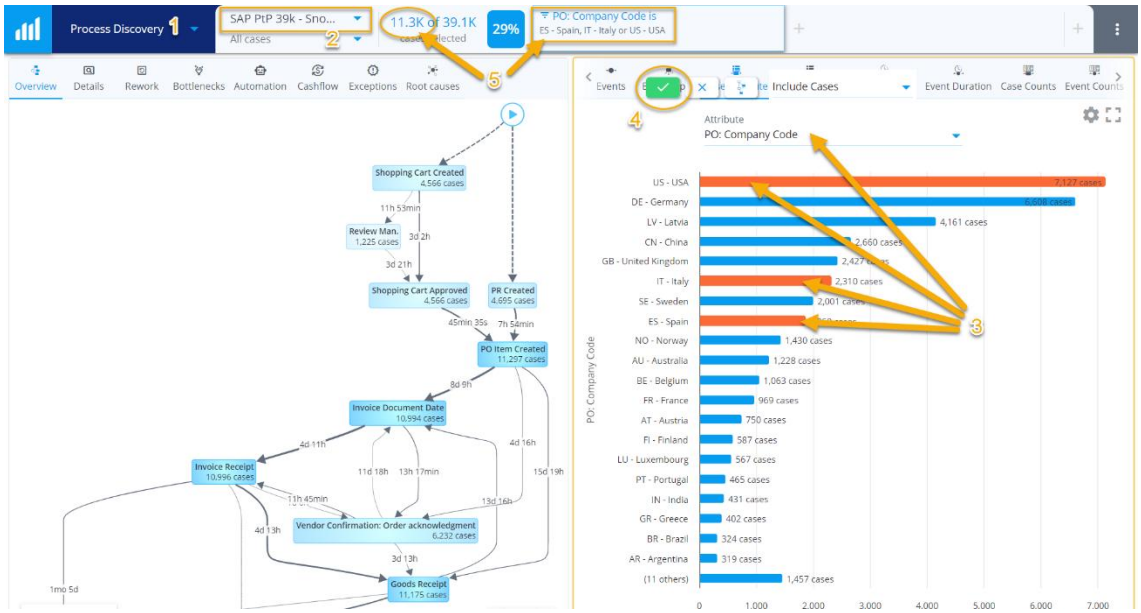


Another important aspect of analysis is applying Filters to your analysis. In QPR ProcessAnalyzer filters can be applied by clicking the blue + button on the header or by clicking data elements visualized in the Flowchart and the Chart. This is what we will practice next.

Exercise #5: Creating Filters

Let's practice creating a filter from a Chart. This example uses one of QPR's demo models, however, feel free to use any other model and follow the steps in the exercise.

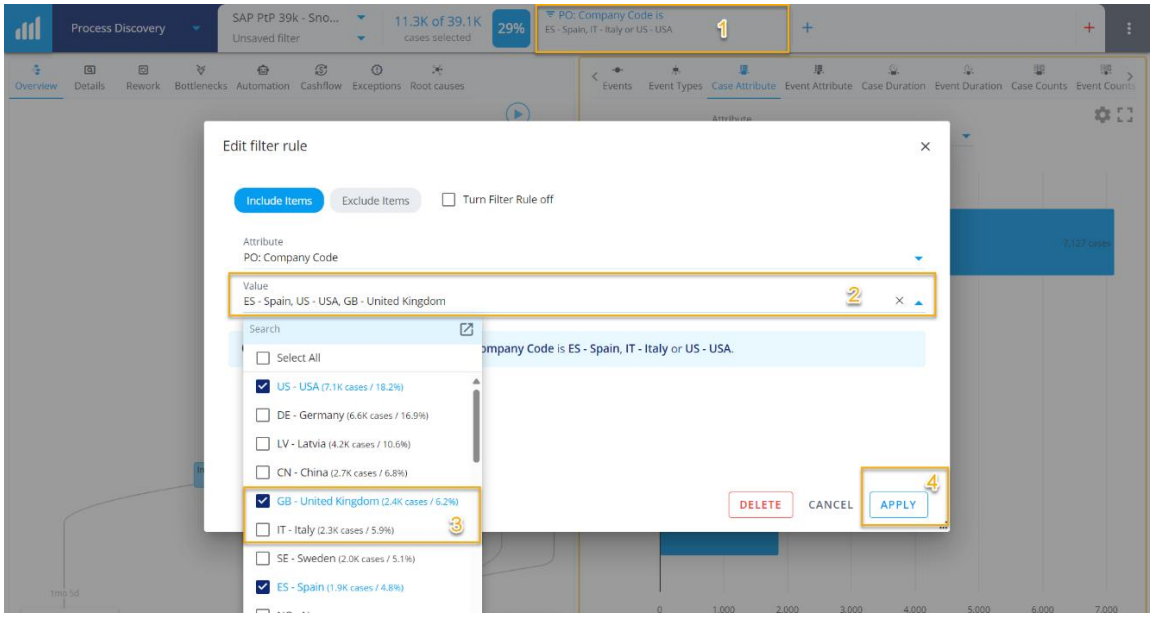
1. Go to Process Discovery
2. Change your active model to "SAP PtP 39k – Snowflake" (you can search in Models and Projects drop-down).
3. Use Case Attribute Preset (in tab) and change the attribute to "PO: Company Code"
4. Create a filer by clicking on Spain, Italy, and USA. Confirm your filter from the green checkbox.
5. You should end up with 11.3K cases (29% of total). You can see the filter being documented on the header.



Exercise #6: Modifying existing filters

In this exercise, we want to modify the filter created in Exercise #5 by changing Italy to United Kingdom. If you used another, you can use different attribute values to complete the exercise.

1. Click the filter documented in the header
2. Click the “Value” drop-down
3. Deselect “Italy” and select "United Kingdom”
4. Click “Apply”

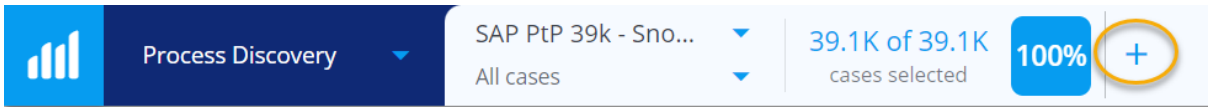


After making the changes, you can see from the header that the filter has now been changed and the analysis also changes dynamically according to the filters.

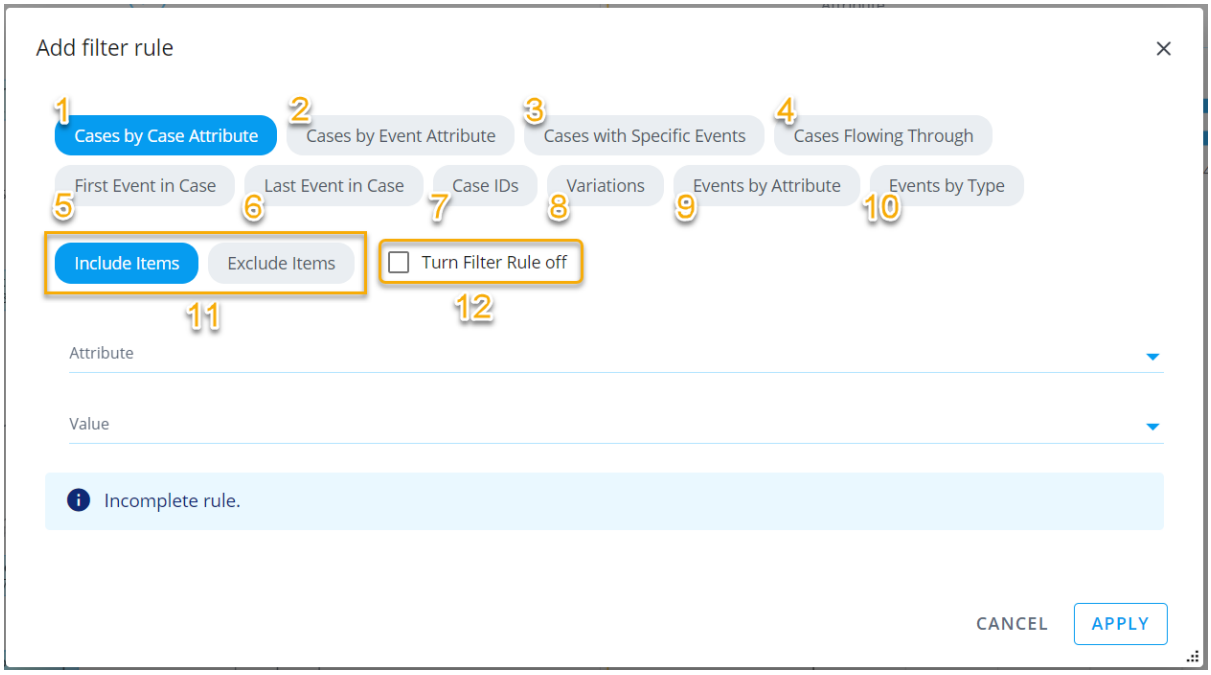
Filter Dialog

As you learned in the previous exercises, the filters are documented into the header, and they can be further modified by opening the Filter Dialog. The Filter Dialog can also be used to create new filters which we will have a look at next.

Clicking filters or the blue + button on the header opens the Filter Dialog which is used to create or modify the most common filters.



Filter Dialog provides different types of filters that are used to filter different objects in the data.



Let's quickly go through the options:

1. Cases by Case Attribute uses case attributes to include/exclude cases
2. Cases by Event Attribute uses event attributes to include/exclude cases
3. Cases with Specific Events is used to include/exclude cases with specific activities
4. Cases Flowing Through is used to include/exclude cases with a direct flow between two activities
5. First Event in Case filters cases based on their first activity
6. Last Event in Case filters cases based on their last activity

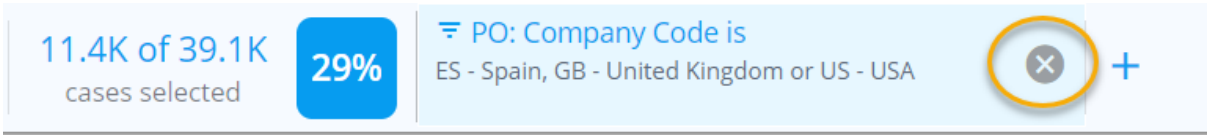
7. Case IDs is used to include/exclude specific cases by ID
8. Variations is used to include/exclude cases with specific variation(s)
9. Events by Attribute uses event attributes to include/exclude events
10. Events by Type is used to include/exclude specific Event Types
11. Selection whether the filter rule is used to include or exclude data
12. Setting to turn filter rule off without removing it from the header

In addition to the above options, it is possible to create many kinds of custom filters from Charts in QPR ProcessAnalyzer. However, modifying such filters is currently not possible from the Filter Dialog.

Exercise #7: Creating and removing filters from the header

In this exercise, we will remove the filter we have created and re-create it from the header with the blue + button.

1. Click on the blue + button in header to open the Filter Dialog
2. Create a filter with cases belonging to three different locations or teams (Cases by Case Attribute)
3. Hover your mouse over the filter in the header and click the X button



Filters from Flowchart

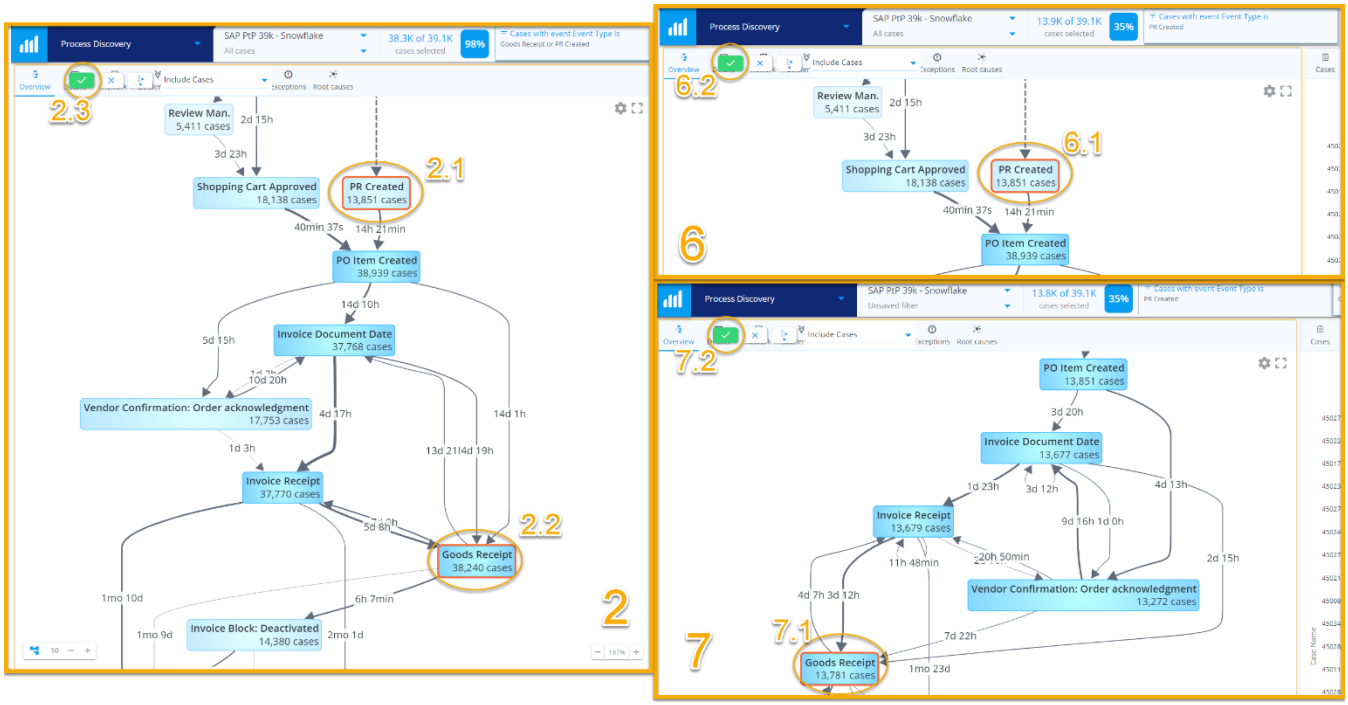
Filters can also be created from the Flowchart which is very useful when you want to analyze cases with specific activities or flows. Filters from Flowchart are created just like filters from a Chart, by clicking the data elements: event type boxes and flow arrows.

Exercise #8: Creating Filters from Flowchart

Let's practice creating filters from Flowchart.

1. Go to Process Discovery and select a model you want to use. Depending on which model you use, the selected activities may be different from the example. (This example uses QPR's "SAP PtP 39k – Snowflake" demo model.)

2. Select two activities: “PR Created” and “Goods Receipt” and apply the filter
3. Have a look to the header and see that the rule is “Event Type is Goods Receipt or PR Created”
4. Look at the number of cases in the header and notice that you are still looking at 38,3K cases even though only 13,8K cases have a PR created.
5. Remove the filter
6. Click on “PR Created” activity and apply the filter
7. Click on “Goods Receipt” activity and apply the filter
8. Have a look at the case count and documented filters. Why is the count different this time?



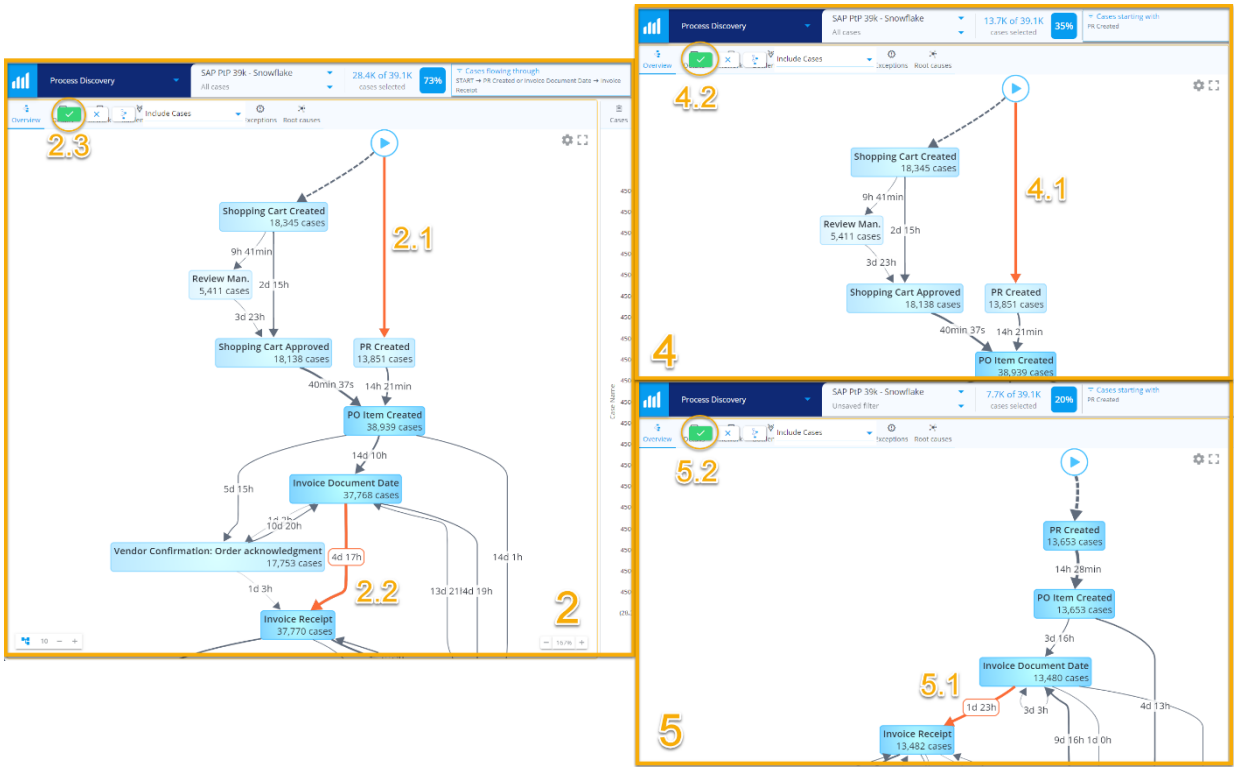
The reason behind the difference is how the filters were applied. When using multi-select (first time), the filter includes cases where either one of the activities occurs. Since cases without PRs still have Goods Receipt occurrences, the case count is a lot larger than with the second option.

On the second time, we first created a filter to only see cases with a PR and then added another filter of cases where Goods Receipt occurs. Filters created in this fashion are listed separately and applied in order from left to right in the header.

Exercise #9: Creating Flow Filters from Flowchart

Let’s repeat the previous exercise but use flows instead of activities. Note that the selected flows can be different if you are using a different model than in the example.

1. Remove existing filters if you have any
2. Select two flows: START -> “PR Created” and “Invoice Document Date” -> “Invoice Receipt” and apply the filter
3. See the case count in the header and remove the filter
4. Create a filter for flow: START -> “PR Created” and apply
5. Create a filter for flow: “Invoice Document Date” -> “Invoice Receipt” and apply
6. Notice that again, the case counts are different in both examples for the same reason.

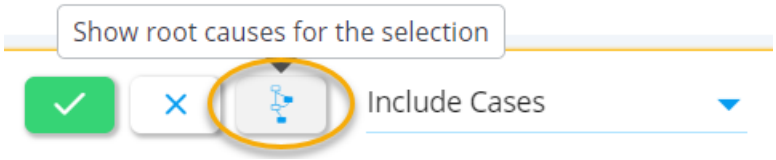


It is also possible to combine flow and activity filters. Go ahead and try clicking some flows and activities and apply the filter. Notice on the header that two separate filter rules are created.

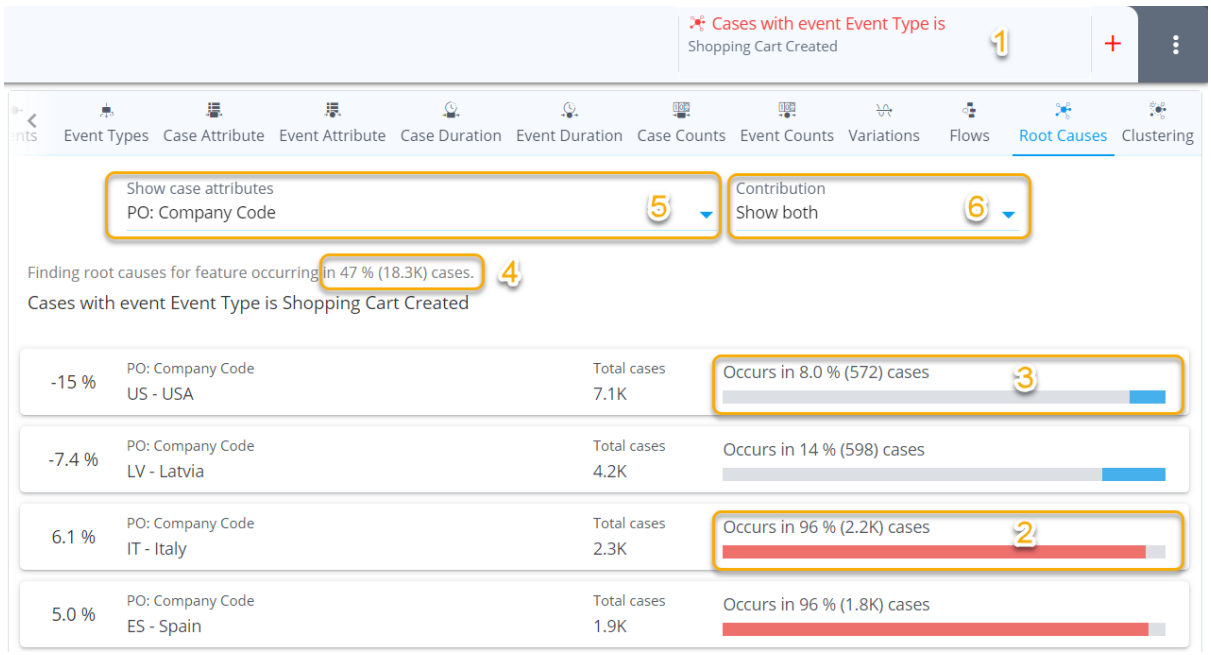
Root Cause Analysis

As you have seen, creating filters is very easy and powerful in QPR ProcessAnalyzer. Root Cause Analysis with QPR ProcessAnalyzer is just as easy and now you’ll learn how to do that.

When you are creating filters, you might have seen a third option before applying the filter. The third option will apply the selection as *Root Cause Criteria* instead of a filter rule. If we want to create a Root Cause Analysis of our selection, we can just press the third option and use the Preset: “Root Cause Analysis”.



Once you have jumped to the “Root Cause Analysis” Preset, you can see the following chart. However, the results you see may be different depending on what kind of Root Cause Criteria you have applied.



Quick explanation of the chart:

1. Applied Root Cause Criteria
2. Contributing attribute value
3. Impeding attribute value
4. Average occurrence rate of the chosen Root Cause Criteria in all the data
5. Selection of shown case attributes in the analysis
6. Selection of shown results in the analysis (contributing/impeding/both)

The chart shows you what kind of findings QPR ProcessAnalyzer was able to make from the data based on your Root Cause Criteria (1). The values with red color (2) are those where the Root Cause Criteria occurs more often than on average in the data overall (4). Vice-versa, the values with blue color (3) are those where the Root Cause Criteria occurs less often than on average. Thus, both colors represent findings that contribute to (2) or impede (3) the chosen Root Cause Criteria (1).

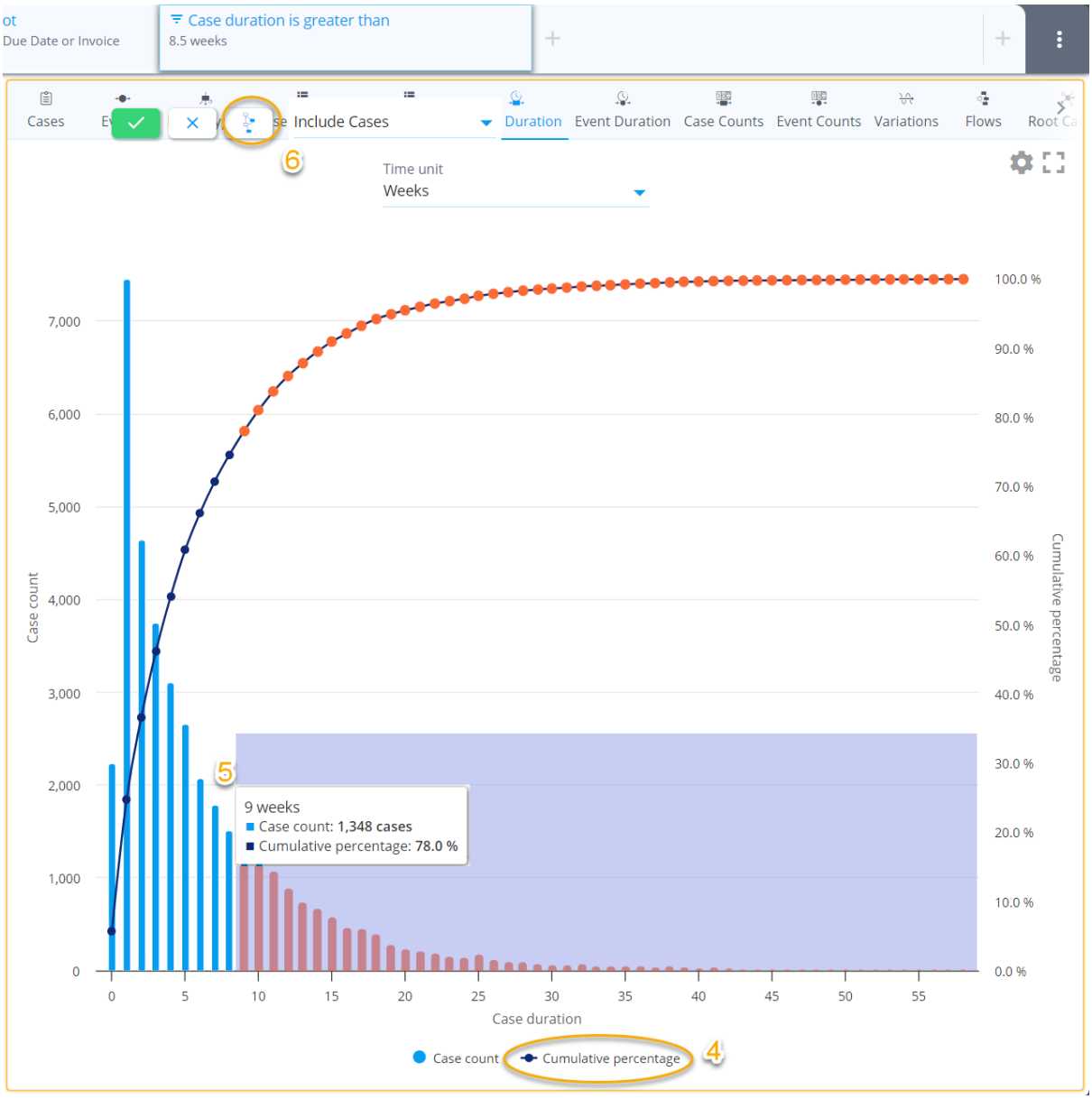
If you want to reduce the amount of case attributes in the analysis, you can choose which ones to see from the “Show case attributes” drop-down (5). You can also choose to focus your analysis on only the contributing or impeding findings from the “Contribution” drop-down (6), by default both findings are shown.

Now that we understand the basics of how Root Cause Analysis works in QPR ProcessAnalyzer, let’s practice using it.

Exercise #10: Using the Root Cause Analysis

In this exercise you will learn how to use Root Cause Analysis in combination with filters to analyze cases with longer lead time than usual. Feel free to use any model available, this example uses QPR's “SAP PtP 39k – Snowflake” demo model.

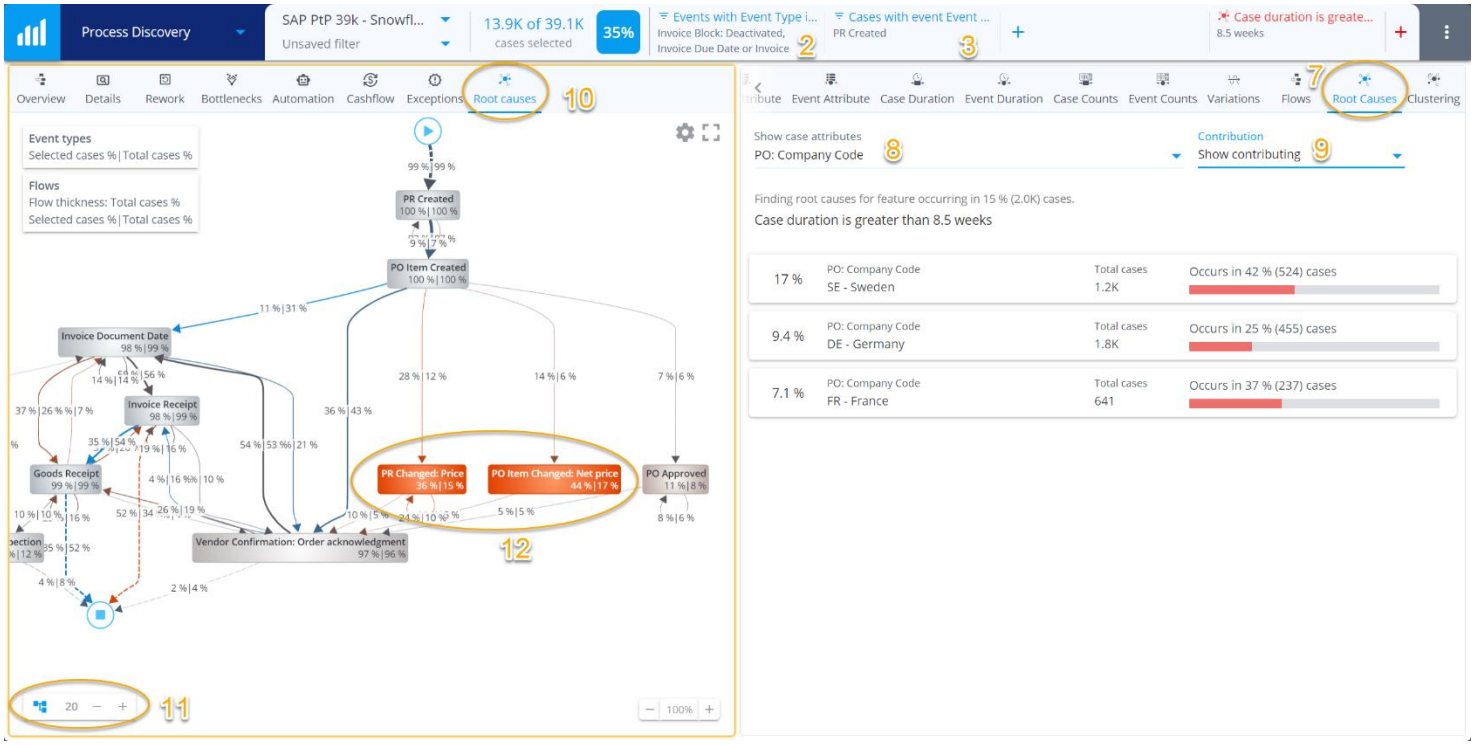
1. Go to Process Discovery and select the model you want to analyze
2. Create a filter to only see the active part of your process. This often means excluding activities with necessary waiting times such as due dates and payment clearing as they depend on payment terms.
   Exclude Event Types: “Invoice Block: Deactivated”, “Invoice Due Date”, and ”Invoice Payment”
3. Focus on a specific part of your process. As an example, we focus on the process with Purchase Requisitions.
   Create a filter of cases going through “PR Created” activity.
4. To analyze long lead times, use the “Case Duration” Preset and click on “Cumulative percentage” to activate the line chart.
5. Find the spot where Cumulative percentage >= 80% (Pareto rule) and select all values beyond this point by clicking and dragging your mouse to the end of the graph.



6. Create a Root Cause Criteria of the selected data.
7. Find “Root Causes” from the Preset tab and click on it. (You may need to scroll to the right to find it)
8. Click on the “Show case attributes” drop-down and select only one attribute to be visible.
9. Click on the “Contribution” drop-down to only show contributing findings. The analysis lists those attribute values where long lead times are more common than elsewhere in the data.
10. Now, let’s move to the Flowchart side of Process Discovery. On the Flowchart’s Preset tab, click on “Root causes”.
11. Increase the number of shown variations to 20 (or more depending on the model you are using).

12. Note that Change activities are highlighted as root causes of long lead times.

Here's an example screenshot on what the result should look like.



This exercise has taught you a great and easy method to conduct any analysis using QPR ProcessAnalyzer.

1. Filter the data down to the specific part of the process we want to analyze
   (Cases with Purchase Requisitions and only the part of the process where the cases are actively handled i.e. not waiting for payment terms as that is not relevant to operative activities in the example.)
2. Using a ready-made analysis to define the problem/feature we want to analyze
   (Case Duration analysis and selecting the long lead times)
3. Identifying attributes and activities as Root Causes behind the selected behavior
   (Using the out-of-the-box Root Cause Analysis for Chart and Flowchart)

The same method can be used to also analyze and find Root Causes for many other kinds of behavior in the process.

Viewing Dashboards

We've had a look at how to create a quick and easy ad-hoc analysis in Process Discovery leveraging the powerful Root Cause Analysis feature. However, when focusing analysis on certain behavior or problems in the process, it is common to create Dashboards as they allow you to save your progress and access the analysis again later on.

In this course, we will go through how to use, browse, and view ready-made dashboards. Creating dashboards will be touched on in another course.

As explained earlier in this course, you can find Dashboards linked to the currently active Model under the Navigation Menu drop-down or from Workspace under different Projects. You can always change your active model and click on the Navigation Menu to see what kind of Dashboards are available for the Model.

Exercise #11: Switching Dashboards through Navigation Menu

Let's practice switching and viewing different Models and Dashboards by using Navigation Menu.

1. Go to Home page
2. Select any Model as active if you don't have one yet (use the Projects & Models drop-down in the header)
3. Click on Navigation Menu
4. Click on any of the dashboards available (if none exist, try to use a different Model)
5. Have a look at the Dashboard, are there any default Filters on the Dashboard?
6. Apply some Filters (from charts and/or from the Filter Dialog). When applying Filters, the dashboard dynamically changes according to your selections.
7. Click on Navigation Menu and jump to a different Dashboard
8. Have a look at the Dashboard, see if there are any default Filters, and try creating some of your own
9. Change the active Model. What may happen is that you see some Charts in the Dashboard don't show any values. This is most likely because the Model you changed to doesn't have the same values as the previous one did and since you have created Filters using the old values, all the data is hidden.
10. Click on Navigation Menu and change to a different Dashboard. Now you should see data in the Dashboard. If not, check from the header if you still have some Filters active that were created with the old Model.

That is how you can switch Dashboards using the Navigation Menu. Another way to access Dashboards is through Workspace. Let's go through that in the next exercise.

Exercise #12: Browsing Dashboards in Workspace

This exercise shows you an alternative way to browse Dashboards. Instead of using the Navigation Menu, we will be using Workspace to access Dashboards.

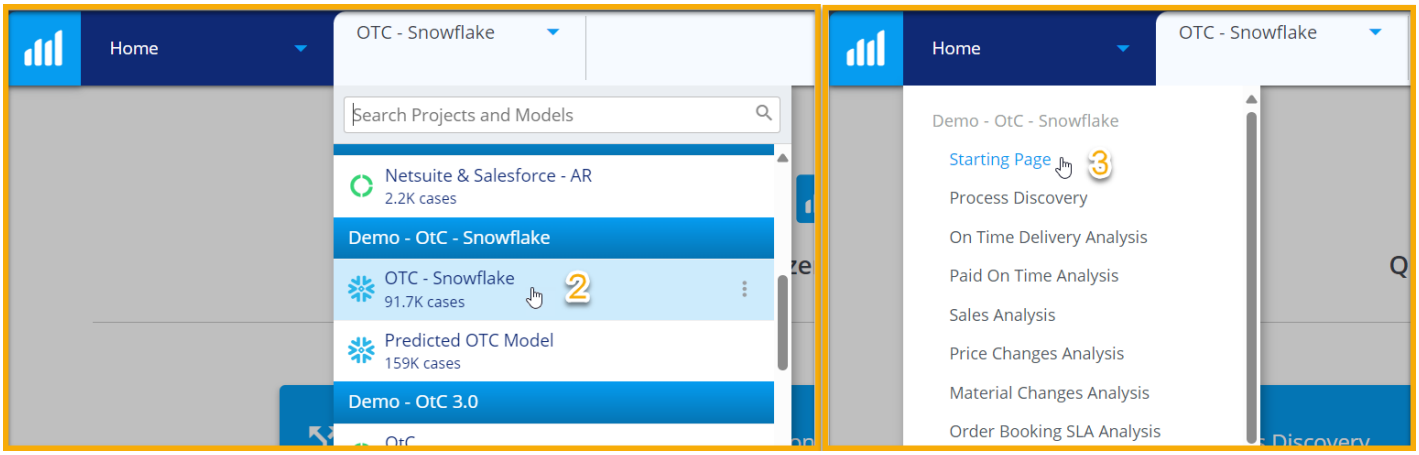
1. Go to Workspace
2. Look at the available Projects and go to one of them.
3. When in a Project, you can see all the Dashboards within the Project (in alphabetical order). Go to any of the available Dashboards (if none exist, try to find a Project with Dashboards).
4. When in a Dashboard, go back to Workspace
5. Go to a different Project and open a Dashboard

Now that we have learned how to access Dashboards, let's see how Dashboards are used to analyze and monitor processes.

Exercise #13: Using Dashboards

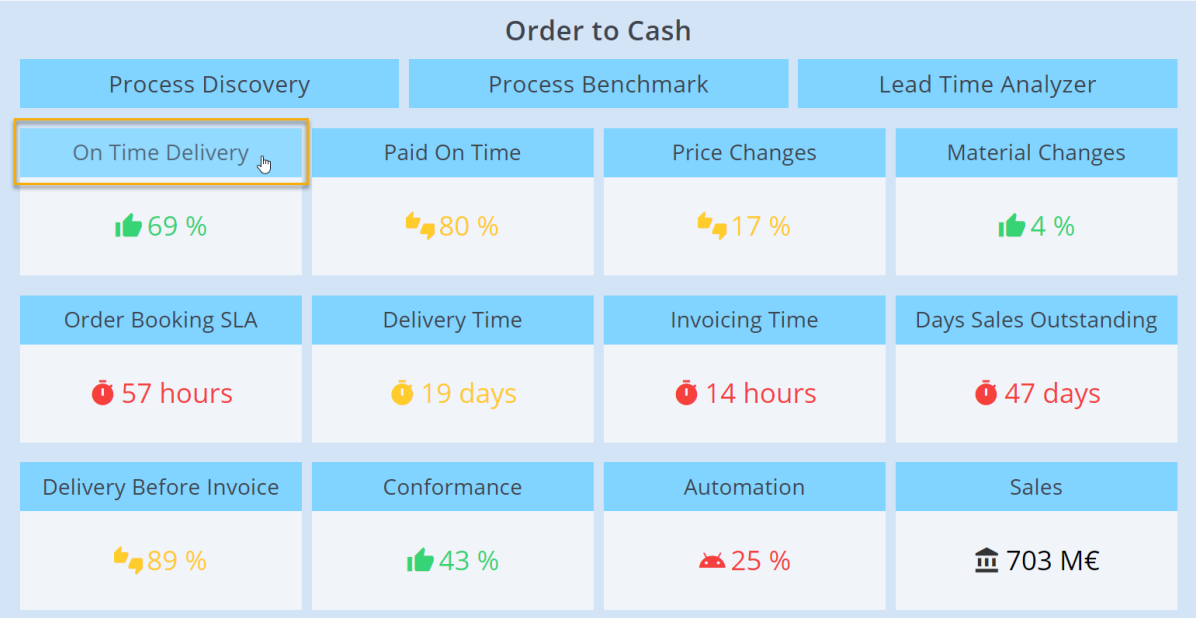
Let's practice how Dashboards can be used to support analysis. For the best experience in this exercise, we recommend using QPR's ready-made solution for Order-to-Cash process. If you are using other Dashboards, you can try to apply similar steps to complete the exercise. Results will depend on what kind of Dashboards you have available.

1. Go to Home page
2. Select Model "OTC - Snowflake" active. (Can be found in Project "Demo - OtC - Snowflake")
3. Click on Navigation Menu and go to Dashboard named "Starting Page" Starting Page is one example of a Dashboard that lists your most important

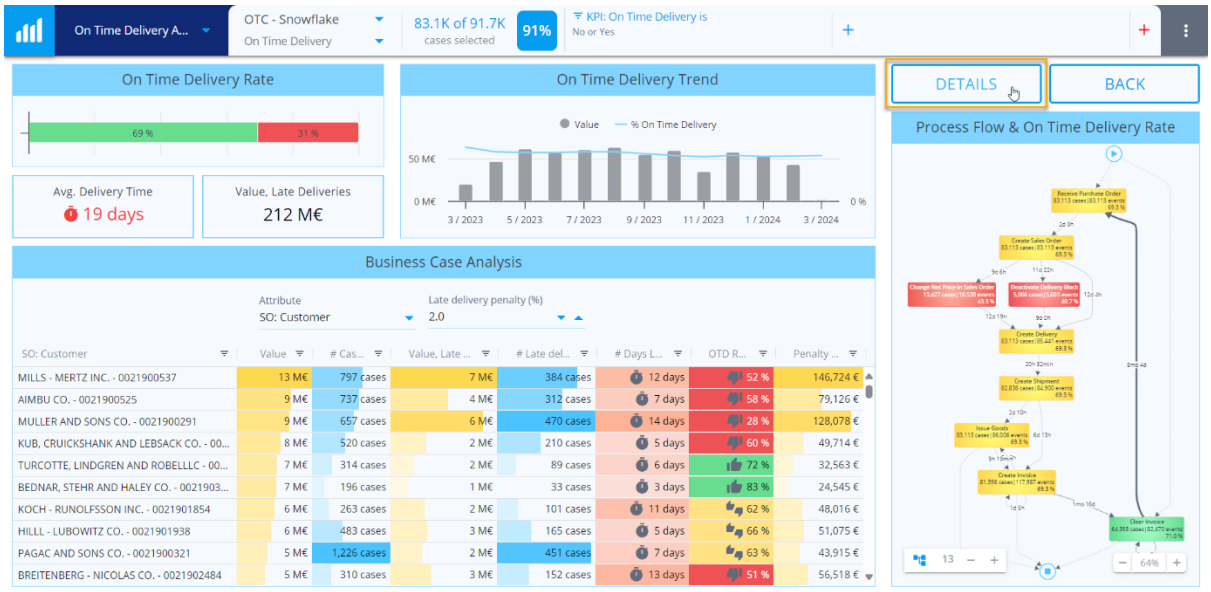


analyses and KPIs. It includes links to different Dashboards within the OtC solution.

4. Click on "On Time Delivery" link on the Dashboard.



5. You are now looking at a high-level view on On Time Delivery analysis. Have a look at the Dashboard and click on "DETAILS" box on the top right.



6. Now, you can see a more detailed analysis of On Time Delivery. The Dashboard shows you Root Cause Analysis for late deliveries (notice how change activities are highlighted in the flowchart) along with other more detailed analysis on the topic. Feel free to try creating Filters and read what are the biggest reasons behind late deliveries

The exercise showed one example on how Dashboard can be designed and used to quickly have a look at certain behavior or issues in the process. With Dashboards, it is not necessary to always start your analysis from scratch, and you can have multiple charts in the same view. QPR provides multiple ready-made solutions for different use cases which you can use without additional fees.

Congratulations! You are now ready to use QPR ProcessAnalyzer to analyze your process and reap the benefits of process mining!

This course has taught you the basics of using QPR ProcessAnalyzer. You've learned how to:

- Navigate in QPR ProcessAnalyzer
- Use Process Discovery and Presets to quickly analyze your process
- Create filters to focus your analysis
- Use the powerful Root Cause Analysis feature to find the reasons behind certain behavior in your process
- View and use dashboards to monitor and analyze process performance

In the next course, we will have a look at how to create content in QPR ProcessAnalyzer by creating custom charts and dashboards.